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# Early summer soybean diseases in 2002

Xiao-Bing Yang
*Iowa State University*, xbyang@iastate.edu

INTEGRATED CROP MANAGEMENT

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In early summer, soybean seedling diseases are diminishing and foliar and root diseases are starting to show up. This article discusses some soybean diseases (excluding viral diseases) you may see during scouting in July.

## Phytophthora root rot

The Iowa State University Plant Disease Clinic has received many soybean samples infected with *Phytophthora*. Last year, most infected samples were early seedling-stage plants (before the first true leaves), whereas most of the samples this season are plants above the V2 growth stage. Calls from agronomists at seed companies indicate prevalence and damage by *Phytophthora* root rot, with some fields replanted twice. According to Brian Frischmeyer (SCE, Sully, IA), the disease is worse than last year with many fields having diseased plants. In a field of 45 acres, plants in almost the entire field were infected. Differences between soybean treated and untreated with chemicals were evident by the need for replanting in his area.

**Phytophthora root rot of soybean.**

Enlarge [1]

Damping-off has occurred in some popular varieties that have the Rps-1k gene. This situation was anticipated because recent data indicated a drastic increase in *Phytophthora* races that can defeat the Rps-1k gene. Take good notes on *Phytophthora* root rot location and level of infection is your fields, especially on varieties with Rps-1k gene. Such information will help in future management of this disease.

## Fungal root rot

Both *Rhizoctonia* root rot and *Fusarium* root rot have been found from many soybean fields. Typical symptoms of these diseases are lack of lateral roots with discoloration (dark to red brown) on taproots. Generally, the disease samples came from fields that also had other problems, mainly iron chlorosis in high-pH fields or herbicide stress. Application of some herbicides for weed control may stress soybean plants and thereby increase their susceptibility to fungal infection. If so, consider cultivation to promote root growth, which helps soybean grow out of the problem. If root rot is enhanced by iron chlorosis, see the article [2] in the July 1, 2002, Integrated Crop Management newsletter for management options.

**Fusarium root rot of soybean.**

Enlarge [3]

## Bacterial blight

Bacterial blight was found in one soybean sample. Normally, this disease occurs in Iowa every year without causing significant yield losses. It is caused by the bacterium Pseudomonas syringae. Lesions (small, angular, water-soaked, yellow-to-brown spots) of bacterial blight are normally first observed on top leaves. The lesions enlarge in rainy weather and merge to produce irregular dead areas. Sometimes, brown spot can be mistaken for bacterial blight but the two diseases are easy to separate; bacterial blight occurs on upper new leaves and brown spot infects aged leaves or leaves on the lower portion of plants. In parts of Iowa where there has been frequent rain, more bacterial blight may be observed.

## Brown spot

A foliar disease commonly seen this month is brown spot, caused by the fungus *Septoria glycines*. Like bacterial blight, this disease occurs every year. Disease symptoms occur on the lower leaves of soybean plants. The fungus spreads by splashing rain, thus current warm-weather conditions may arrest the development of this disease. Symptoms include many irregular, dark brown spots on both upper and lower leaf surfaces. Adjacent lesions frequently merge to form irregularly shaped blotches. Brown spot usually does not cause damage unless the disease progresses due to frequent rains later in the season and there is considerable premature defoliation.

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